

issue the original SOLAS Exemption Certificate describing the exemption. Subsequent SOLAS Exemption Certificates are issued by the cognizant OCMI unless any changes to the vessel or its operations have occurred that changes the information on the SOLAS Exemption or Passenger Ship Safety Certificates, in which case the Commandant will authorize the cognizant OCMI to reissue the certificate. A SOLAS Exemption Certificate is not valid for longer than the period of the SOLAS Passenger Ship Safety Certificate to which it refers.

[CGD 85-080, 61 FR 953, Jan. 10, 1996; 61 FR 20557, May 7, 1996, as amended by USCG-2007-0030, 75 FR 78087, Dec. 14, 2010]

§ 176.925 Safety Management Certificate.

(a) All vessels that carry more than 12 passengers on an international voyage must have a valid Safety Management Certificate and a copy of their company's valid Document of Compliance certificate on board.

(b) All such vessels must meet the applicable requirements of 33 CFR part 96.

(c) A Safety Management Certificate is issued for a period of not more than 60 months.

[CGD 95-073, 62 FR 67515, Dec. 24, 1997]

§ 176.930 Equivalentents.

As outlined in Chapter I (General Provisions) Regulation 5, of SOLAS, the Commandant may accept an equivalent to a particular fitting, material, apparatus, or any particular provision required by SOLAS regulations if satisfied that such equivalent is at least as effective as that required by the regulations. An owner or managing operator of a vessel may submit a request for the acceptance of an equivalent following the procedures in §175.540 of this chapter. The acceptance of an equivalent must be indicated on the vessel's SOLAS Passenger Ship Safety Certificate or Safety Management Certificate, as appropriate.

[CGD 95-073, 62 FR 67515, Dec. 24, 1997, as amended by USCG-2007-0030, 75 FR 78087, Dec. 14, 2010]

PART 177—CONSTRUCTION AND ARRANGEMENT

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AUTHORITY: 46 U.S.C. 2103, 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGD 85-080, 61 FR 961, Jan. 10, 1996, unless otherwise noted.

Subpart A—General Provisions

§ 177.100 General requirement.

The construction and arrangement of a vessel must allow the safe operation of the vessel in accordance with the terms of its Certificate of Inspection giving consideration to provisions for a seaworthy hull, protection against fire, means of escape in case of a sudden unexpected casualty, guards and rails in hazardous places, ventilation of enclosed spaces, and necessary facilities for passengers and crew.

[CGD 85-080, 61 FR 961, Jan. 10, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997]

§ 177.115 Applicability to existing vessels.

(a) Except as otherwise required by paragraph (b) of this section, an existing vessel must comply with the construction and arrangement regulations that were applicable to the vessel on March 10, 1996, or, as an alternative, the vessel may comply with the regulations in this part.

(b) Alterations, or modifications made to the structure or arrangements of an existing vessel, that are a major conversion, on or after March 11, 1996, must comply with the regulations of this part. Repairs or maintenance conducted on an existing vessel, resulting in no significant changes to the original structure or arrangement of the vessel, must comply with the regulations applicable to the vessel on March 10, 1996, or, as an alternative, with the regulations in this part. However, when outfit items such as furnishings and mattresses are renewed, they must comply with the regulations in this part.

Subpart B—Plans

§ 177.202 Plans and information required.

(a) Except as provided in paragraph (c) of this section and §177.210 of this

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part, the owner of a vessel requesting initial inspection for certification shall, prior to the start of construction unless otherwise allowed by the cognizant Officer in Charge, Marine Inspection (OCMI), submit for approval to the cognizant OCMI, at least two copies of the following plans:

- (1) Outboard profile;
- (2) Inboard profile; and
- (3) Arrangement of decks.

(b) In addition, the owner shall, prior to receiving a Certificate of Inspection, submit for approval to the cognizant OCMI, at least two copies of the following plans, manuals, analyses, and calculations that are applicable to the vessel as determined by the OCMI:

- (1) Midship section;
- (2) Survival craft embarkation stations;
- (3) Machinery installation, including but not limited to:
 - (i) Propulsion and propulsion control, including shaft details;
 - (ii) Steering and steering control, including rudder details;
 - (iii) Ventilation diagrams; and
 - (iv) Engine exhaust diagram;
- (4) Electrical installation including, but not limited to:
 - (i) Elementary one-line diagram of the power system;
 - (ii) Cable lists;
 - (iii) Bills of materials;
 - (iv) Type and size of generators and prime movers;
 - (v) Type and size of generator cables, bus-tie cables, feeders, and branch circuit cables;
 - (vi) Power, lighting, and interior communication panelboards with number of circuits and rating of energy consuming devices;
 - (vii) Type of capacity of storage batteries;
 - (viii) Rating of circuit breakers and switches, interrupting capacity of circuit breakers, and rating and setting of overcurrent devices; and
 - (ix) Electrical plant load analysis.
- (5) Lifesaving equipment locations and installation;
- (6) Fire protection equipment installation including, but not limited to:
 - (i) Fire main system plans and calculations;
 - (ii) Fixed gas fire extinguishing system plans and calculations;

(iii) Fire detecting system and smoke detecting system plans;

(iv) Sprinkler system diagram and calculations; and

(v) Portable fire extinguisher types, sizes and locations;

(7) Fuel tanks;

(8) Piping systems including: bilge, ballast, hydraulic, sanitary, compressed air, combustible and flammable liquids, vents, soundings, and overflows;

(9) Hull penetrations and shell connections;

(10) Marine sanitation device model number, approval number, connecting wiring and piping; and

(11) Lines and offsets, curves of form, cross curves of stability, and tank capacities including size and location on vessel; and

(12) On sailing vessels:

(i) Masts, including integration into the ship's structure; and

(ii) Rigging plan showing sail areas and centers of effort as well as the arrangement, dimensions, and connections of the standing rigging.

(c) For a vessel of not more than 19.8 meters (65 feet) in length, the owner may submit specifications, sketches, photographs, line drawings or written descriptions instead of any of the required drawings, provided the required information is adequately detailed and acceptable to the cognizant OCMI.

(d) An owner may submit any plans, manuals, or calculations, required to be submitted to the OCMI under this part, to the Commanding Officer, U.S. Coast Guard Marine Safety Center, 2100 2nd St., SW., Stop 7102, Washington, DC 20593-7102. Three copies of all documents are required to be submitted for Marine Safety Center plan approval.

(e) For a vessel, the construction of which was begun prior to approval of the plans and information required by paragraphs (a) and (b) of this section, the cognizant OCMI may require any additional plans and information, manufacturers' certifications of construction, testing including reasonable destructive testing, and inspections, which the OCMI determines are necessary to verify that the vessel com-

plies with the requirements of this subchapter.

[CGD 85-080, 61 FR 961, Jan. 10, 1996, as amended by USCG-2004-18884, 69 FR 58351, Sept. 30, 2004; USCG-2007-29018, 72 FR 53968, Sept. 21, 2007; USCG-2009-0702, 74 FR 49240, Sept. 25, 2009]

§ 177.210 Plans for sister vessels.

(a) Plans are not required for a vessel that is a sister vessel, provided:

(1) Approved plans for the original vessel are on file at the Marine Safety Center or in the files of the cognizant OCMI;

(2) The owner of the plans authorizes their use for the new construction of the sister vessel;

(3) The regulations used for the original plan approval have not changed since the original approval; and

(4) There are no major modifications to any of the systems to be used.

(b) If approved plans for the original vessel are not on file at the MSC or with the cognizant OCMI, the vessel owner shall submit plans as described in § 177.202 of this part.

Subpart C—Hull Structure

§ 177.300 Structural design.

Except as otherwise allowed by this subpart, a vessel must comply with the structural design requirements of one of the standards listed below for the hull material of the vessel.

(a) Wooden hull vessels: Lloyd's Yachts and Small Craft (incorporated by reference, see 46 CFR 175.600);

(b) Steel hull vessels:

(1) Lloyd's Yachts and Small Craft; or

(2) ABS Steel Vessel Rules (< 61 Meters)(incorporated by reference, see 46 CFR 175.600);

(c) Fiber reinforced plastic vessels:

(1) Lloyd's Yachts and Small Craft;

(2) ABS Plastic Vessel Rules (incorporated by reference, see 46 CFR 175.600); or

(3) ABS High Speed Craft (incorporated by reference, see 46 CFR 175.600);

(d) Aluminum hull vessels:

(1) Lloyd's Yachts and Small Craft; or

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(i) For a vessel of more than 30.5 meters (100 feet) in length: ABS Aluminum Vessel Rules (incorporated by reference, see 46 CFR 175.600); or

(ii) For a vessel of not more than 30.5 meters (100 feet) in length: ABS Steel Vessel Rules (< 61 Meters), with the appropriate conversions from the ABS Aluminum Vessel Rules; or

(2) ABS High Speed Craft;

(e) Steel hull vessels operating in protected waters: ABS Steel Vessel Rules (Rivers/Intracoastal) (incorporated by reference, see 46 CFR 175.600).

[USCG–2003–16630, 73 FR 65205, Oct. 31, 2008]

§ 177.310 Satisfactory service as a design basis.

When scantlings for the hull, deckhouse, and frames of the vessel differ from those specified by the standards listed in § 177.300 of this part, and the owner can demonstrate that the vessel, or another vessel approximating the same size, power, and displacement, has been built to such scantlings and has been in satisfactory service insofar as structural adequacy is concerned for a period of at least 5 years, such scantlings may be approved by the cognizant OCMI instead of the scantlings required by the applicable standards specified in § 177.300 of this part.

§ 177.315 Vessels of not more than 19.8 meters (65 feet) in length carrying not more than 12 passengers.

The scantlings for a vessel of not more than 19.8 meters (65 feet) in length carrying not more than 12 passengers that do not meet the standards in § 177.300 or § 177.310 may be approved by the cognizant OCMI if the builder of the vessel establishes to the satisfaction of the OCMI that the design and construction of the vessel is adequate for the intended service.

§ 177.330 Sailing vessels.

The design, materials, and construction of masts, posts, yards, booms, bowsprits, and standing rigging on a sailing vessel must be suitable for the intended service. The hull structure must be adequately reinforced to ensure sufficient strength and resistance to plate buckling. The cognizant OCMI may require the owner to submit de-

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tailed calculations on the strength of the mast, post, yards, booms, bowsprits, and standing rigging to the Marine Safety Center for evaluation.

§ 177.340 Alternate design considerations.

When the structure of vessel is of novel design, unusual form, or special materials, which cannot be reviewed or approved in accordance with § 177.300, § 177.310 or § 177.315, the structure may be approved by the Commanding Officer, Marine Safety Center, when it can be shown by systematic analysis based on engineering principles that the structure provides adequate safety and strength. The owner shall submit detailed plans, material component specifications, and design criteria, including the expected operating environment, resulting loads on the vessel, and design limitations for such vessel, to the Marine Safety Center.

Subpart D—Fire Protection

§ 177.405 General arrangement and outfitting.

(a) *Fire hazards to be minimized.* The general construction of the vessel must be such as to minimize fire hazards insofar as it is reasonable and practicable.

(b) *Combustibles insulated from heated surfaces.* Internal combustion engine exhausts, boiler and galley uptakes, and similar sources of ignition must be kept clear of and suitably insulated from combustible material. Dry exhaust systems for internal combustion engines on wooden or fiber reinforced plastic vessels must be installed in accordance with ABYC P-1 (incorporated by reference, see 46 CFR 175.600).

(c) *Separation of machinery and fuel tank spaces from accommodation spaces.* Machinery and fuel tank spaces must be separated from accommodation spaces by boundaries that prevent the passage of vapors.

(d) *Paint and flammable liquid lockers.* Paint and flammable liquid lockers must be constructed of steel or equivalent material, or wholly lined with steel or equivalent material.

(e) *Vapor barriers.* Vapor barriers must be provided where insulation of

any type is used in spaces where flammable and combustible liquids or vapors are present, such as machinery spaces and paint lockers.

(f) *Waste receptacles.* Unless other means are provided to ensure that a potential waste receptacle fire would be limited to the receptacle, waste receptacles must be constructed of non-combustible materials with no openings in the sides or bottom.

(g) *Mattresses.* All mattresses must comply with either:

(1) The U.S. Department of Commerce "Standard for Mattress Flammability" (FF 4-72.16), 16 CFR Part 1632, Subpart A and not contain polyurethane foam; or

(2) IMO Resolution A.688(17) (incorporated by reference, see 46 CFR 175.600). Mattresses that are tested to this standard may contain polyurethane foam.

[CGD 85-080, 61 FR 961, Jan. 10, 1996, as amended by USCG-2003-16630, 73 FR 65206, Oct. 31, 2008]

§ 177.410 Structural fire protection.

(a) *Cooking areas.* Vertical or horizontal surfaces within 910 millimeters (3 feet) of cooking appliances must have an ASTM E-84 (incorporated by reference, see 46 CFR 175.600) flame spread rating of not more than 75. Curtains, draperies, or free hanging fabrics must not be fitted within 910 millimeters (3 feet) of cooking or heating appliances.

(b) *Composite materials.* When the hull, bulkheads, decks, deckhouse, or superstructure of a vessel is partially or completely constructed of a composite material, including fiber reinforced plastic, the resin used must be fire retardant and meet as accepted by the Commandant as meeting NPFC MIL-R-21607E(SH) (incorporated by reference, see 46 CFR 175.600). Resin systems that have not been accepted as meeting NPFC MIL-R-21607E(SH) may be accepted as fire retardant if they have an ASTM E-84 flame spread rating of not more than 100 when tested in laminate form. The laminate submitted for testing the resin system to ASTM E-84 must meet the following requirements:

(1) The test specimen laminate total thickness must be between 3.2 and 6.4 millimeters ($\frac{1}{8}$ to $\frac{1}{4}$ inch).

(2) The test specimen laminate must be reinforced with glass fiber of any form and must have a minimum resin content of 40 percent by weight.

(3) Tests must be performed by an independent laboratory.

(4) Test results must include, at a minimum, the resin manufacturer's name and address, the manufacturer's designation (part number) for the resin system including any additives used, the test laboratory's name and address, the test specimen laminate schedule, and the flame spread index resulting from the ASTM E-84 test.

(5) Specific laminate schedules, regardless of resin type, that have an ASTM E-84 flame spread rating of not more than 100 may be considered as equivalent to the requirement in this section to use a fire retardant resin. Requests for qualifying a specific laminate schedule as fire retardant for use in a particular vessel may be submitted for consideration by visitors to the Commanding Officer, U.S. Coast Guard Marine Safety Center, 1900 Half Street, SW., Suite 1000, Room 525, Washington, DC 20024, or transmitted by mail to: Commanding Officer, U.S. Coast Guard Marine Safety Center, 2100 2nd St., SW., Stop 7102, Washington, DC 20593-7102, in a written or electronic format. Information for submitting the VSP electronically can be found at <http://www.uscg.mil/HQ/MS>.

(c) *Use of general purpose resin.* General purpose resins may be used instead of fire retardant resins if the following additional requirements are met:

(1) *Cooking and heating appliances.* Galleys must be surrounded by B-15 Class fire boundaries. This may not apply to concession stands that are not considered high fire hazards areas (galleys) as long as they do not contain medium to high heat appliances such as deep fat fryers, flat plate griddles, and open ranges with heating surfaces exceeding 121 °C(250 °F). Open flame systems for cooking and heating are not allowed.

(2) *Sources of ignition.* Electrical equipment and switch boards must be protected from fuel or water sources. Fuel lines and hoses must be located as far as practical from heat sources. Internal combustion engine exhausts, boiler and galley uptakes, and similar

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sources of ignition must be kept clear of and suitability insulated from any woodwork or other combustible matter. Internal combustion engine dry exhaust systems must be installed in accordance with ABYC P-1 (incorporated by reference, see 46 CFR 175.600).

(3) *Fire detection and extinguishing systems.* Fire detection and extinguishing systems must be installed in compliance with §§181.400 through 181.420 of this chapter. Additionally, all fiber reinforced plastic (FRP) vessels constructed with general purpose resins must be fitted with a smoke activated fire detection system of an approved type, installed in accordance with §76.27 in subchapter H of this chapter, in all accommodation spaces, all service spaces, and in isolated spaces such as voids and storage lockers that contain an ignition source such as electric equipment or piping for a dry exhaust system.

(4) *Machinery space boundaries.* Boundaries that separate machinery spaces from accommodation spaces, service spaces, and control spaces must be lined with noncombustible panels or insulation approved in accordance with §164.009 in subchapter Q of this chapter, or other standard specified by the Commandant.

(5) *Furnishings.* Furniture and furnishings must comply with §116.423 in subchapter K of this chapter.

(d) *Limitations on the use of general purpose resin—(1) Overnight accommodations.* Vessels with overnight passenger accommodations for more than 12 persons must not be constructed with general purpose resin.

(2) *Gasoline fuel systems.* Vessels with engines powered by gasoline or other fuels having a flash point of 43.3 °C (110 °F) or lower must not be constructed with general purpose resin, except for vessels powered by outboard engines with portable fuel tanks stored in an open area aft, if, as determined by the cognizant OCMI, the arrangement does not produce an unreasonable hazard.

(3) *Cargo.* Vessels carrying or intended to carry hazardous combustible

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or flammable cargo must not be constructed with general purpose resin.

[CGD 85–080, 61 FR 961, Jan. 10, 1996; 61 FR 24464, May 15, 1996, as amended at 62 FR 51356, Sept. 30, 1997; USCG–1999–6216, 64 FR 53228, Oct. 1, 1999; USCG–2007–29018, 72 FR 53968, Sept. 21, 2007; USCG–2003–16630, 73 FR 65206, Oct. 31, 2008; USCG–2009–0702, 74 FR 49240, Sept. 25, 2009]

Subpart E—Escape Requirements

§ 177.500 Means of escape.

(a) Except as otherwise provided in this section, each space accessible to passengers or used by the crew on a regular basis, must have at least two means of escape, one of which must not be a watertight door.

(b) The two required means of escape must be widely separated and, if possible, at opposite ends or sides of the space to minimize the possibility of one incident blocking both escapes.

(c) Subject to the restrictions of this section, means of escape may include normal exits and emergency exits, passageways, stairways, ladders, deck scuttles, and windows.

(d) The number and dimensions of the means of escape from each space must be sufficient for rapid evacuation in an emergency for the number of persons served. In determining the number of persons served, a space must be considered to contain at least the number of persons as follows:

(1) Passenger overnight accommodation spaces: Designed capacity;

(2) Accommodation spaces having fixed seating for passengers: Maximum seating capacity;

(3) Public spaces, including spaces such as casinos, restaurants, club rooms, and cinemas, and public accommodation spaces as defined in §175.400 of this subchapter, except overnight accommodation spaces: One person may be permitted for each 0.9 square meters (10 square feet) of deck area. In computing such deck area, the following areas must be excluded:

(i) Areas for which the number of persons permitted is determined using the fixed seating criterion;

(ii) Obstructions, including stairway and elevator enclosures, elevated stages, bars, and cashier stands, but

not including slot machines, tables, or other room furnishings;

(iii) Toilets and washrooms;

(iv) Interior passageways less than 860 millimeters (34 inches) wide and passageways on open deck less than 710 millimeters (28 inches) wide;

(v) Spaces necessary for handling lifesaving equipment, anchor handling equipment, or line handling gear, or in way of sail booms or running rigging; and

(vi) Bow pulpits, swimming platforms, and areas that do not have a solid deck, such as netting on multi hull vessels;

(4) Crew overnight accommodation spaces: Two-thirds designed capacity; and

(5) Work spaces: Occupancy under normal operating conditions.

(e) The dimensions of a means of escape must be such as to allow easy movement of persons when wearing life jackets. There must be no protrusions in means of escape that could cause injury, ensnare clothing, or damage life jackets.

(f) The minimum clear opening of a door or passageway used as a means of escape must not be less than 810 millimeters (32 inches) in width, however, doors or passageways used solely by crew members must have a clear opening not less than 710 millimeters (28 inches). The sum of the width of all doors and passageways used as means of escape from a space must not be less than 8.4 millimeters (0.333 inches) multiplied by the number of passengers for which the space is designed.

(g) A dead end passageway, or the equivalent, of more than 6.1 meters (20 feet) in length is prohibited.

(h) Each door, hatch, or scuttle, used as a means of escape, must be capable of being opened by one person, from either side, in both light and dark conditions. The method of opening a means of escape must be obvious, rapid, and of adequate strength. Handles and securing devices must be permanently installed and not capable of being easily removed. A door, hatch or scuttle must open towards the expected direction of escape from the space served.

(i) A means of escape which is not readily apparent to a person from both inside and outside the space must be

adequately marked in accordance with § 185.606 of this chapter.

(j) A ladder leading to a deck scuttle may not be used as a means of escape except:

(1) On a vessel of not more than 19.8 meters (65 feet) in length, a vertical ladder and a deck scuttle may be used as not more than one of the means of escape from passenger accommodation space; or

(2) As not more than one of the means of escape from any crew accommodation space or work space.

(k) Each ladder used as a means of escape must be mounted at least 180 millimeters (7 inches) from the nearest permanent object in back of the ladder. Rungs must be:

(1) At least 405 millimeters (16 inches) in width; and

(2) Not more than 305 millimeters (12 inches) apart, and uniformly spaced for the length of the ladder with at least 114 millimeters (4.5 inches) clearance above each rung.

(l) When a deck scuttle serves as a means of escape, it must not be less than 455 millimeters (18 inches) in diameter and must be fitted with a quick acting release and a holdback device to hold the scuttle in an open position.

(m) Footholds, handholds, ladders, and similar means provided to aid escape, must be suitable for use in emergency conditions, of rigid construction, and permanently fixed in position, unless they can be folded, yet brought into immediate service in an emergency.

(n) On a vessel of not more than 19.8 meters (65 feet) in length, a window or windshield of sufficient size and proper accessibility may be used as one of the required means of escape from an enclosed space, provided it:

(1) Does not lead directly overboard;

(2) Can be opened or is designed to be kicked or pushed out; and

(3) Is suitably marked.

(o) Only one means of escape is required from a space where:

(1) The space has a deck area less than 30 square meters (322 square feet);

(2) There is no stove, heater, or other source of fire in the space;

(3) The means of escape is located as far as possible from a machinery space or fuel tank; and

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(4) If an accommodation space, the single means of escape does not include a deck scuttle or a ladder.

(p) Alternative means of escape from spaces may be provided if acceptable to the cognizant OCMI.

[CGD 85-080, 61 FR 961, Jan. 10, 1996; 62 FR 64306, Dec. 5, 1997]

Subpart F—Ventilation

§ 177.600 Ventilation of enclosed and partially enclosed spaces.

(a) An enclosed or partially enclosed space within a vessel must be adequately ventilated in a manner suitable for the purpose of the space.

(b) A power ventilation system must be capable of being shut down from the pilot house.

(c) An enclosed passenger or crew accommodation space and any other space occupied by a crew member on a regular basis must be ventilated by a power ventilation system unless natural ventilation in all ordinary weather conditions is satisfactory to the OCMI.

(d) An exhaust duct over a frying vat or a grill must be of at least 11 U.S. Standard Gauge steel.

(e) Combustibles and other foreign materials are not allowed within ventilation ducts. However, metal piping and electrical wiring installed in a metal protective enclosure may be installed within ventilation ducts, provided that the piping or the wiring does not interfere with the operation of fire dampers. Electrical wiring and piping may not be installed in an exhaust duct over a frying vat or grill.

[CGD 85-080, 61 FR 961, Jan. 10, 1996, as amended at 62 FR 51356, Sept. 30, 1997]

§ 177.620 Ventilation of machinery and fuel tank spaces.

In addition to the requirements of this subpart, ventilation systems for spaces containing machinery or fuel tanks must comply with the requirements of part 182 of this chapter.

Subpart G—Crew Spaces

§ 177.700 General requirements.

(a) A crew accommodation space and a work space must be of sufficient size,

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adequate construction, and with suitable equipment to provide for the safe operation of the vessel and the protection and accommodation of the crew in a manner practicable for the size, facilities, service, route, speed, and modes of operation of the vessel.

(b) The deck above a crew accommodation space must be located above the deepest load waterline.

§ 177.710 Overnight accommodations.

Overnight accommodations must be provided for all crew members if the vessel is operated more than 12 hours in a 24 hour period, unless the crew is put ashore and the vessel is provided with a new crew.

[CGD 85-080, 61 FR 961, Jan. 10, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997]

Subpart H—Passenger Accommodations

§ 177.800 General requirements.

(a) All passenger accommodations must be arranged and equipped to provide for the safety of the passengers in consideration of the route, modes of operation, and speed of the vessel.

(b) The height of ceilings in a passenger accommodation space, including aisles and passageways, must be at least 1,880 millimeters (74 inches), but may be reduced at the sides of a space to allow the camber, wiring, ventilation ducts, and piping.

(c) A passenger accommodation space must be maintained to minimize fire and safety hazards and to preserve sanitary conditions. Aisles must be kept clear of obstructions.

(d) A passenger accommodation space must not contain:

(1) Electrical generation equipment or transformers, high temperature parts, pipelines, rotating assemblies, or any other item that could injure a passenger, unless such an item is adequately shielded or isolated; and

(2) A control for operating the vessel, unless the control is so protected and located that operation of the vessel by a crew member will not be impeded by a passenger during normal or emergency operations.

(e) The deck above a passenger accommodation space must be located above the deepest load waterline.

(f) A variation from a requirement of this subpart may be authorized by the cognizant OCMI for an unusual arrangement or design provided there is no significant reduction of space, accessibility, safety, or sanitation.

§ 177.810 Overnight accommodations.

(a) A berth must be provided for each passenger authorized to be carried in overnight accommodation spaces. Each berth must measure at least 1,880 millimeters (74 inches) by 610 millimeters (24 inches) and have at least 610 millimeters (24 inches) of clear space above.

(b) Berths must not be located more than three high and must be constructed of wood, fiber reinforced plastic, or metal. A berth located more than 1520 millimeters (60 inches) above the deck must be fitted with a suitable aid for access.

(c) The construction and arrangement of berths and other furniture must allow free and unobstructed access to each berth. Each berth must be immediately adjacent to an aisle leading to a means of escape from the accommodation space. An aisle alongside a berth must be at least 610 millimeters (24 inches) wide. An aisle joining two or more aisles in an overnight accommodation space must be at least 1,060 millimeters (42 inches) wide.

[CGD 85-080, 61 FR 961, Jan. 10, 1996, as amended by CGD 97-057, 62 FR 51050, Sept. 30, 1997]

§ 177.820 Seating.

(a) A seat must be provided for each passenger permitted in a space for which the fixed seating criterion in §176.113(b)(3) of this subchapter has been used to determine the number of passengers permitted.

(b) A seat must be constructed to minimize the possibility of injury and avoid trapping occupants.

(c) Installation of seats must provide for ready escape.

(d) Seats, including fixed, temporary, or portable seats, must be arranged as follows:

(1) An aisle of not more than 4.572 meters (15 feet) in overall length must

be not less than 610 millimeters (24 inches) in width.

(2) An aisle of more than 4.572 meters (15 feet) in overall length must be not less than 760 millimeters (30 inches) in width.

(3) Where seats are in rows, the distance from seat front to seat front must be not less than 760 millimeters (30 inches) and the seats must be secured to a deck or bulkhead.

(4) Seats used to determine the number of passengers permitted, in accordance with §176.113(b)(3) of this chapter, must be secured to the deck, bulkhead, or bulwark.

[CGD 85-080, 61 FR 961, Jan. 10, 1996, as amended by USCG-2010-0759, 75 FR 60004, Sept. 29, 2010]

Subpart I—Rails and Guards

§ 177.900 Deck rails.

(a) Except as otherwise provided in this section, rails or equivalent protection must be installed near the periphery of all decks of a vessel accessible to passengers or crew. Equivalent protection may include lifelines, wire rope, chains, and bulwarks, which provide strength and support equivalent to fixed rails. Deck rails must include a top rail with the minimum height required by this section, and lower courses or equivalent protection as required by this section.

(b) Deck rails must be designed and constructed to withstand a point load of 91 kilograms (200 pounds) applied at any point in any direction, and a uniform load of 74 kilograms per meter (50 pounds per foot) applied to the top rail in any direction. The point and uniform loads do not need to be applied simultaneously.

(c) Where space limitations make deck rails impractical for areas designed for crew use only, such as at narrow catwalks in way of deckhouse sides, hand grabs may be substituted.

(d) The height of top rails required by paragraph (a) of this section must be as follows:

(1) Rails on passenger decks of a ferry or a vessel engaged in excursion trips, including but not limited to sight-seeing trips, dinner and party cruises, and overnight cruises, must be at least 1,000 millimeters (39.5 inches) high.

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(2) Rails on a vessel subject to the 1966 International Convention on Load Lines must be at least 1,000 millimeters (39.5 inches) high.

(3) All other rails must be at least 910 millimeters (36 inches) high.

(4) While engaged in big game angling, the minimum rail height may be reduced to not less than 760 millimeters (30 inches) in way of a person using specialized angling techniques or equipment, such as when using a pedestal mounted fixed fighting chair on a low freeboard vessel, if it can be shown that a higher rail would interfere with the fishing operation and the lower rail would not significantly reduce safety. A rail complying with the requirements of paragraphs (d)(1), (2), or (3) of this section as applicable must be installed when big game angling is not being conducted.

(e) Where the principal business of the vessel requires the discharge of persons or cargo in a seaway, such as on pilot boats and dive boats, the cognizant OCMI may accept alternatives to the rails required in paragraphs (d)(1), (2), and (3) of this section for those areas of a deck where passengers or cargo are discharged and for which removable rails, lifelines, or chains would hinder discharge operations.

(f) A sailing vessel, an open boat, or any other vessel not specifically covered elsewhere in this section, must have rails of a minimum height or equivalent protection as considered necessary by the cognizant OCMI, based on the vessel's operation, route, and seating arrangement.

(g) Rail courses or the equivalent must be installed between a top rail required by paragraph (a) of this section, and the deck so that no open space exists that is more than 305 millimeters (12 inches) high except:

(1) On passenger decks of a ferry or of a vessel on an excursion trip the following must be installed:

(i) Bulwarks;

(ii) Chain link fencing or wire mesh that has openings of not more than 4 inches in diameter; or

(iii) Bars, slats, rail courses, or an equivalent spaced at intervals of not more than 100 millimeters (4 inches).

(2) On a vessel subject to the 1966 International Convention on Load

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Lines, rail courses, or an equivalent, must be installed so that there is not an open space higher than 230 millimeters (9 inches) from the deck to the first rail course or equivalent.

(h) Rails must be permanently installed except that the following rails may be removable;

(1) Rails in way of embarkation stations and boarding locations;

(2) Rails over 760 millimeters (30 inches) high in way of fishing seats addressed by paragraph (d)(4) of this section; and

(3) Rails on a vessel when the service of the vessel is routinely changed, as determined by the cognizant OCMI, and the required top rail height varies depending on the service of the vessel at a particular time.

§ 177.920 Storm rails.

Suitable storm rails or hand grabs must be installed where necessary in passageways, at deckhouse sides, and at ladders and hatches.

§ 177.940 Guards in vehicle spaces.

On a vessel authorized to carry one or more vehicles, suitable chains, cables, or other barriers must be installed at the end of each vehicle runway. In addition, temporary rails or equivalent protection must be installed in way of each vehicle ramp, in compliance with § 177.900, when the vessel is underway.

§ 177.960 Guards for exposed hazards.

An exposed hazard, such as gears or rotating machinery, must be properly protected by a cover, guard, or rail.

§ 177.970 Protection against hot piping.

Piping, including valves, pipe fittings and flanges, conveying vapor, gas, or liquid, the temperature of which exceeds 65.5 °C (150 °F), must be suitably insulated where necessary to prevent injuries.

Subpart J—Window Construction and Visibility

§ 177.1010 Safety glazing materials.

Glass and other glazing material used in windows accessible to passengers

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and crew must be of material that will not break into dangerous fragments if fractured.

[CGD 85-080, 61 FR 961, Jan. 10, 1996; 61 FR 20557, May 7, 1996]

§ 177.1020 Strength.

Each window, port hole, and its means of attachment to the hull or deck house, must be capable of withstanding the maximum load from wave and wind conditions expected due to its location on the vessel and the authorized route of the vessel.

§ 177.1030 Operating station visibility.

(a) Windows and other openings at the operating station must be of sufficient size and properly located to provide an adequate view for safe navigation in all operating conditions.

(b) Glass or other glazing material used in windows at the operating station must have a light transmission of not less than 70 percent according to Test 2 of ANSI Z 26.1 (incorporated by reference, see 46 CFR 175.600) and must comply with Test 15 of ANSI Z 26.1 for Class I Optical Deviation.

[CGD 85-080, 61 FR 961, Jan. 10, 1996, as amended by USCG-2003-16630, 73 FR 65206, Oct. 31, 2008]

PART 178—INTACT STABILITY AND SEAWORTHINESS

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AUTHORITY: 43 U.S.C. 1333; 46 U.S.C. 2103, 3306, 3703; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGD 85-080, 61 FR 966, Jan. 10, 1996, unless otherwise noted.

Subpart A—General Provisions

§ 178.115 Applicability to existing vessels.

Except where specifically stated otherwise, an existing vessel must comply with the intact stability and seaworthiness regulations which were applicable to the vessel on March 10, 1996, or, as an alternative, the vessel may comply with the regulations in this part.

[CGD 85-080, 61 FR 966, Jan. 10, 1996, as amended by USCG-2007-0030, 75 FR 78087, Dec. 14, 2010]

Subpart B—Stability Instructions for Operating Personnel

§ 178.210 Stability information.

(a) Stability information (stability details indicated on the Certificate of Inspection, a stability letter, or a stability booklet), is required on certain vessels by paragraphs (b), (c), or (d) of this section. Enough stability information, including stability calculations and assumptions made to use them, must be provided to allow the master to be able to determine operating guidelines, loading restrictions, and ensure compliance with the applicable intact and damage stability regulations of this chapter.

(b) A vessel which, under § 178.310 of this part, complies with requirements in subchapter S of this chapter, must have stability details on the vessel's Certificate of Inspection, a stability letter issued by the cognizant Officer in Charge, Marine Inspection (OCMI) or